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ABSTRACT

The emergence and development of monetary concepts were investigated in 80 black children ages 2 to 8 years. Three concepts explored were the age at which children (1) can name the denominations of money, (2) become aware of the values of different denominations of money, and (3) become aware of the purchasing power of money. Socioeconomic (SES) differences were also investigated. Results indicated developmental differences about the knowledge of money. Everyday experiences were thought to be important in the development of these concepts. Lower SES children generally identified coins at an early age, while middle class children identified various denominations of paper money earlier. (SBT)

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THE EMERGENCE AND DEVELOPMENT OF MONETARY CONCEPTS IN YOUNG CHILDREN

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In an attempt to understand cognitive development an approach that has been utilized by many researchers is to conduct studies on concept formation. Many concepts have been studied extensively; however, there is still a dire need for many additional studies of concept formation. A study that seemed appropriate and urgently needed at this time was one that dealt with the formation of monetary concepts; and specifically, a study that utilized black children as subjects.

Statement of the Problem

The problem of this investigation was to determine the emergence and development of monetary concepts in young children. Specifically, the study sought answers to the following questions:

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1. At what age level are children able to name accurately the denominations of money?
2. When do they become aware of the relative values of different denominations of money?
3. When does the concept of purchasing power emerge?
4. In the development of monetary concepts, are there differences related to socioeconomic status?

Method of Procedure

This study was a cross-sectional study in which children of different age levels were studied to determine age changes in monetary concepts. The interview method which is similar to Piaget's clinical method was used to collect data. After the children had completed the task set before them, they were systematically questioned in order to enhance the experimenter's understanding of their monetary concepts.

Selection of Subjects. There were 80 black children used in this study. They ranged in age from two to eight years. The children were divided into two groups; one group of 40 children selected from middle socioeconomic residential districts (Group A), and another group of 40 children selected from lower socio-economic residential districts (Group B). At each age

level there were twelve children except at the two-year-level where there were only eight children. Of the twelve children at each age level, beginning with age three, six were in Group A and six were in Group B. Children of both sexes were included at each age level and were equally divided.

In order to answer the four questions posed in this study, three experiments were devised. An experiment was designed to answer each of the first three questions asked in the statement of the problem. The answer to the fourth question regarding socioeconomic differences was sought in the data collected for the three experiments. In the first experiment (Experiment I) data were collected and analyzed to determine the children's ability to name the pieces of money. The second experiment (Experiment II) dealt with the children's understanding of the relative value of the denominations; that is, which coins or bills were more or less than others in value. The third experiment (Experiment III) examined their knowledge of what the money could buy--purchasing power. The fourth question was answered by comparing Group A and Group B on their performances in the three experiments described above.

Findings of the Study

Findings for Experiment I. Results obtained in Experiment I indicated that even at the age of two the

children knew that they were shown money; however, they were unable to differentiate and precisely identify the money presented to them. The two-year-olds called all coins by a global, undifferentiated term such as "money", or they used one specific coin such as "penny" or "nickel" to designate all coins indiscriminately. Nevertheless, some children made a distinction between coins and paper money, calling all paper money, "dollar." This tendency to call the one-dollar bill and five-dollar bill, a dollar continued until the age of seven.

By the age of three a majority of the children recognized the penny and some of them correctly identified the nickel, dime and quarter. Hence, it can be said that for this sample monetary concepts began to emerge at some time between the age of two and three years. Like the two-year-olds, the three-year-olds used a global, undifferentiated term to describe most of the denominations of money; however, they qualified their terms by an adjective "big" or "little." For example, if all coins were called "nickel," a quarter was a "big nickel" and a dime, a "little nickel."

At age four there was a gradual increase in the percentage of children who accurately identified the penny; however, this was not the case for the nickel, dime and the quarter. The percentage of children who recognized the nickel, dime and quarter decreased. The

children at age four confused the nickel, dime, and quarter. A possible explanation for this change in trend is that before the age of four, the children were using size and brightness cues to assist them in the identification of money. At age four there seemed to be a shift from this frame of reference, thereby affecting the children's performance in such a manner as to cause a decrease in the percentage of children who could correctly identify the money.

The five-year-olds easily recognized the penny and the dime, but they were still confusing the nickel and the quarter. At age six the percentage of children able to accurately identify the penny, nickel, dime, and quarter increased, but there was still evidence that the quarter and nickel were being confused.

At the age of six there was a drastic increase in the children's ability to recognize the one-dollar bill and the five-dollar bill. In addition to their widening sphere of social interaction, around the age of six, children enter the first grade where they learn to recognize numbers and to discriminate between them. This school experience can, in part, account for the rapid increase in their ability to identify correctly the paper money. At age six, 50 per cent of the children recognized the half-dollar; whereas, before six, none of the children correctly identified the half-dollar.

There was a steady increase up to age seven of the number of children who correctly recognized the penny; but the growth in recognition of the nickel, dime and quarter was not so smooth. In fact, for these denominations, a decrease was observed in the developmental curve around age four. For the half-dollar, one-dollar bill, and five-dollar bill, a similar decrease occurred around age seven. At eight years, the percentage of the children correctly identifying these denominations of money again began to increase.

A majority of the children named accurately the denominations of money in the following order and at the following ages: the penny, (3 years); the dime, (5 years); the nickel, quarter, one-dollar bill and five-dollar bill, (6 years); the half-dollar, (8 years).

The children of lower socioeconomic status (Group B) tended to identify coins correctly before the children of middle socioeconomic status (Group A). However, the children of middle socioeconomic status correctly identified paper money before the children of lower socioeconomic status. Even though the ages at which Group A and Group B began to recognize the denominations of money differed, the qualitative aspects of their progress was very much alike.

Findings for Experiment II. The data showed that before the age of four, the children did not comprehend fully the concepts of "more" and "less" and, therefore, were not able to perform the relative value task before they were four years old. At approximately the age of four, however, there was an apparent emergence, in some of the children of the idea of relative value which might be described as pre-conceptual in the Piagetian sense. The predominant feature of the children's understanding of the concept of "more" was its equivalence to the size of the coin rather than its value. Piaget has observed in his study of numerous concepts that when a child is confronted with a new situation, he responds to the immediately observable features of that situation. In this case, size was the most outstanding feature of the money. Selection on the basis of size continued through the age of seven; however, the frequency of its occurrence decreased steadily from four to seven years.

Conception of the relative value of money emerged around the age of six. When the six-year-olds were presented pairs of coins and asked, "What is more?" most of them selected the coin that had the greater value. When asked why the selection was made, they responded by listing the things that the money could buy. By the age of eight, all the children were responding correctly to the question, "Which is more?" and were stating reasons based on value or purchasing power.

A comparison of the results obtained for Group A and Group B showed that the concept of "more" emerged sooner in Group A (Middle SES) than in Group B (Lower SES). That is, the concept of "more" emerged at age four for Group A and at age five for Group B. However, the initial concept operated on the basis of size rather than value. This response continued for Group A (Middle SES) until the age of seven and for Group B (Lower SES) until the age of six. By the age of six, there was a crossover in the performance curves of the two groups. In other words, before age six, Group A performed better than Group B on the relative value task, but by the age of six, Group B was performing this task better than Group A. At the age of seven all the children of Group B were selecting money on the basis of value, but Group A did not reach this level of performance until the age of eight.

Findings for Experiment III. At the age of two, the children showed vague awareness that money had something to do with buying; however, any denomination of money could buy any object. This characteristic continued with decreasing frequency, until approximately the age of four. Around the age of four, a few children began to match items correctly with the denominations of money that could purchase them in the store. However it was not until the age of six that true knowledge of

the purchasing power of money emerged. At the age of six, almost all the children could consistently match the penny, and the dime with the appropriate item that could be purchased in a store. At the age of seven, a majority of the children knew the purchasing power of the penny, dime, quarter, and dollar. Knowledge of the purchasing power of the half-dollar lagged behind that of all other denominations of money. At age eight, there was a dip in the growth curves for the quarter, half-dollar, one-dollar bill and five-dollar bill similar to the dip at ages four and seven in the developmental curves of Experiment I. The writer speculated that an extension of the sample to include ages nine through twelve would provide a description of an upturn in the growth trend after age eight. The writer is convinced that stabilization of this concept occurs at an age beyond the age range of the children of this investigation.

Knowledge of the purchasing power of money began to emerge at age 4 for Group B (Lower SES) and at age 5 for Group A (Middle SES). Also the performance of the Group B was superior to that of Group A on the purchasing power task at each age level studied in this investigation.

B. CONCLUSIONS

The findings of this study support the generally accepted developmental principle that growth is sequentially

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related to age levels. As age increased the children's concepts became more complex and accurate.

The findings also support the proposition that the child's everyday experiences provide the material for the development of concepts and influence the rate at which they develop. For example, the earlier recognition of coins by the children of lower socioeconomic status (Group B), and the earlier discrimination of paper money by the children of middle socioeconomic status (Group B) substantiate this generalization. The faster rate of growth in each instance was attributed largely to the children's differential experiences.

This investigation was undertaken as a positive action on the belief that black children's cognitive development should be studied in its own right, without the aim of making racial comparisons. From the findings of this study, the writer concludes that the process of concept formation is the same in children irrespective of their skin color. However, the content of a concept is a function of the children's particular experiences. Moreover, the theoretical framework of Piaget seemed as appropriate for the interpretation of the findings of this study as for other studies found in the literature on concept formation.

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Finally, the writer concludes that the characteristic dip found in most of the growth curves at age four for the more simple tasks and at age seven or eight for the more complex tasks demands further investigation for its developmental significance. The consistency with which it occurs suggests that there might be a significance which has neither been explained adequately in this study, nor has it been pointed out in the research literature.